enlarged area of the key hole slot in the second attachment member and larger than the narrowed area of the key hole slot in the second attachment member.

16. (New) A hand drill including a detachable subsurface object locator accessory for detecting the presence of an object beneath a surface being probed with the locator, comprising:

a drill housing defining an accessory mount having a mounting surface for receiving a substantially flat surface and including a projecting attachment tab;

a locator housing having a substantially flat bottom surface for sliding along a surface to be probed, the substantially flat bottom surface including a slot sized and dimensioned to engage with the projecting attachment tab for detachably mounting the locator housing to the accessory mounting surface of the drill housing;

sensing circuitry contained within the locator housing for detecting subsurface objects; and

an object indicator connected to the sensing circuitry for indicating the presence of a subsurface object.

REMARKS

Claims 1 – 11 are pending in the application. Claims 1 – 11 have been rejected under 35 U.S.C. Section 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter the Applicants regard as the invention. Claims 1 – 6 and 11 have been rejected under 35 U.S. C. Section 102(b) as anticipated by Hubscher, U.S. Patent Number 5,170,545. Claims 1 – 11 have been rejected under 35 U.S.C. Section 103(a) as unpatentable over Hibbard, U.S. Patent Number 4,797,400 in view of Heger, U.S. Patent Number 5,352,974.

Claims 1 and 7 – 11 have been amended. Support for these amendments is found in the claims as filed and on page 5, paragraphs 24 – 26 of the specification as filed. New claims 12 – 16 have been added. Reconsideration of the claims in view of the amendments and the following remarks is respectfully requested.

Claims 1 – 11 have been rejected under 35 U.S.C. Section 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter the applicants regard as the invention. In response, claims 1 and 7 – 10 have been amended to clarify that claim 1 and associated dependent claims 2 – 10 are directed to an accessory, and not to the drill or drill housing. Subject matter related to the construction of the drill housing has been added as new claims depending from claim 11. As a result of the amendments, the Applicants believe that the claims are in accordance with 35 U.S.C. Section 112 second paragraph, and respectfully request that the rejection under this section be withdrawn.

Claims 1 – 6 and 11 have been rejected under 35 U.S.C. Section 102(b) as anticipated by Hubscher.

Hubscher discloses an adaptor for converting a screwgun into a saw. The adaptor includes a metal sensor including a switch and an indicator light which is useful in determining the position of an electrical box behind the drywall. The adaptor, as can be seen from the cross-sectional view of Fig. 2, is round in construction, as is the underlying screw gun. A front end (15) of the housing (11) is alleged in the Office Action to be flat. However, there is no description of this surface in the specification, other than to define it as an "end". As other surfaces which appear to be flat in Fig. 1 are round, as shown in Figs. 2 and 3, the shape of the end (15) cannot be established with any certainty.

Claim 1, as amended, recites an accessory for use with a drill which includes an accessory housing. The accessory housing includes a substantially flat surface for probing across a wall surface.

Claim 11, as amended recites a hand drill including a detachable subsurface object locator accessory. The hand drill includes a drill housing defining an accessory mount for receiving a substantially flat surface, and a locator housing having a substantially flat bottom surface for sliding along a surface to be probed.

Hubscher discloses neither a drill nor a subsurface object locator for use with a drill. Furthermore, Hubscher fails to disclose a flat surface which can be slid along a wall or other surface to be probed. Even if the end (15) is flat, this end cannot be slid along a wall or other flat surface, as the saw blade (65) and associated coupling devices extend from the end (15), preventing the surface (15) from being positioned proximate a surface to be probed, particularly a flat surface. Hubscher, therefore, fails to recite all of the elements of both of claims 1 and 11, as amended, and the Applicants respectfully request that the rejection of claims 1 – 6 and 11 under 35 U.S.C. Section 102(b) be withdrawn.

Claims 1 – 11 have been rejected under 35 U.S.C. Section 103(a) as unpatentable over Hibbard, in view of Heger. Hibbard discloses a strap on drill paraphernalia holding system (DPHS), comprising a VELCRO strap extending around the housing of the drill. The VELCRO strap material receives a cylinder base in which drill bits are stored. Hibbard does not discuss or even mention any other accessory or device to be used with the drill.

Heger discloses a stud sensor circuit including a digital averager and dual sensitivity for probing thick and thin surfaces. Heger does not disclose a housing for the stud sensor, nor any structure or method for coupling the stud sensor to another

housing or tool. Furthermore, Heger does not disclose, or even mention a drill or any other hand tool.

Claims 1 and 11, as amended, each recite a subsurface object locator including a housing for detachably mounting the locator device to a drill housing. Neither of the cited references, however, discloses a housing for a subsurface object locator at all, much less one that detachably mounts to a drill housing. Furthermore, neither of the cited references disclose a drill housing including a mounting surface for receiving a flat surface as recited in claim 11. These references, therefore, cannot be combined to provide the invention as recited in claims 1 and 11.

Furthermore, even if all of the elements of the claim were found in the cited references, no suggestion or motivation to combine the references is found outside of the Applicants' disclosure. As noted above, the Hibbard reference never discloses a subsurface object locator, stud finder, or any device for use with a drill other than a drill bit, despite the fact that the patentee has "worked extensively in the construction trade" (column 1, lines 21 – 23). Furthermore, Heger does not discuss the use of a drill or any other hand tool in any way. The suggestion for a combination of a drill and a detachable subsurface object locator is therefore not found in the cited prior art references, but rather in Applicants disclosure. The cited references merely recite elements of Applicants disclosure.

This conclusion is not contradicted by the Office Action, which cites no reference to support the proposition that the invention as recited in the claims is obvious. In the Office Action, it is asserted that the combination of a drill with a detachable stud finder would have been obvious in order to make it more convenient. Furthermore, it is suggested that the location and means for mounting the sensor to the drill is an obvious matter of design choice. As noted above, no references are

cited to support this proposition. In response to these assertions, the Applicants note that the flat surface of the subsurface object locator allows the locator to be slid across a flat surface such as a wall, but provides a difficulty in mounting to a drill, which are almost universally round in shape. The selected location and means for mounting are therefore not an obvious matter of design choice and, further, are not shown in the prior art.

In the office action, it is further asserted that no particular problem is solved by the combination. However, as discussed in paragraph 6 of the specification as filed, the problem posed by the combination of a drill and stud sensor is that the circuitry provided in the drill and the circuitry required by the stud sensor tend to interfere. This problem, solved by Applicant's invention, is neither disclosed nor discussed in any of the prior art references.

As the cited references do not disclose all of the elements of the claims and further, do not provide a motivation or suggestion to combine the references, the Applicants believe claims 1 and 11 as amended, as well as dependent claims 2 – 10 and 12 – 15, are patentably distinct over the cited references and the Applicants therefore respectfully request that the rejection of these claims under 35 U.S.C. 103(a) be withdrawn.

New claim 16 recites a hand drill including a detachable subsurface object locator accessory. The drill housing defines an accessory mount for receiving a substantially flat surface and including a projecting attachment tab. The locator housing includes a substantially flat bottom surface for sliding along a surface to be probed, the substantially flat bottom surface including a slot sized and dimensioned to engage with the projecting attachment tab for detachably mounting the locator housing to the accessory mounting surface of the drill housing. As none of the cited

references disclose an accessory device including a slot for attachment to a tab in a drill housing, the Applicants believe this claims is also patentable over the cited references, and respectfully request that this claim also be allowed.

Conclusion

In view of the foregoing amendments and arguments, the Applicants believe that the claims are in condition for allowance, and respectfully request that the rejection to claims 1 - 11 be withdrawn, and that a notice of allowance for claims 1 – 11 and new claims 12 – 16 be issued.

No fees are believed necessary to enter this response. However, if a fee is necessary please charge Deposit Account 17-0055.

Respectfully submitted,

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MARKED UP COPY OF THE CLAIMS

Claims 1, 2, and 7 – 11 have been amended as follows:

1. (Amended) A subsurface object locating accessory for use with a hand drill having a drill housing, the accessory comprising:

an accessory housing having a substantially flat surface for sliding [probing] across a wall surface and an attachment member for detachably mounting the accessory housing to the drill housing;

sensing circuitry contained within the accessory housing for detecting subsurface objects probed by said accessory; and

an object indicator connected to the sensing circuitry for indicating the presence of a subsurface object.

2. (Amended) The drill accessory of claim 1, wherein the [locator] accessory housing is shaped to provide a handrest for operating the drill.

7. (Amended) The drill accessory of claim 6, wherein the key hole slot is sized and dimensioned to receive [drill housing has] a projecting attachment member in the drill housing [with an enlarged head smaller than the enlarged area of the key hole slot and larger than the narrowed area of the key hole slot].

8. (Amended) The drill accessory of claim 7, wherein [the drill housing has two laterally spaced tabs and] the accessory housing has two laterally spaced key hole slots, each of the keyhole slots being sized and dimensioned to receive an attachment member in the drill housing [in registration with the tabs].

9. (Amended) The drill accessory of claim 8, wherein the substantially flat surface of the accessory housing comprises [further including] a base plate [defining the flat surface of the accessory housing and defining], the key hole slots being defined in the base plate.

10. (Amended) The drill accessory of claim 9, wherein the base plate is sized and dimensioned to be received in a mounting plate in the drill housing, the key hole slots in the base plate being [furthering including a mounting plate] removably attachable to a corresponding attachment member in the drill housing [and defining the attachment tabs].

11. (Amended) A hand drill including a detachable subsurface object locator accessory for detecting the presence of an object beneath a surface being probed with the locator, comprising:

a drill housing defining an accessory mount having a mounting surface for receiving a substantially flat surface and including a first attachment member;

a locator housing having a substantially flat bottom surface for sliding along a surface to be probed, the substantially flat bottom surface including a second attachment member engaged with the first attachment member for detachably mounting the locator housing to the accessory mounting surface of the drill housing;

sensing circuitry contained within the locator housing for detecting subsurface objects; and

an object indicator connected to the sensing circuitry for indicating the presence of a subsurface object.

Claims 12 – 16 have been added as follows:

12. (New) The hand drill of claim 11, wherein the second attachment member is a slot.

13. (New) The hand drill of claim 12, wherein the first attachment member is a projecting attachment tab sized and dimensioned to be received in the slot.

14. (New) The hand drill of claim 12, wherein the slot comprises a keyhole shape.

15. (New) The hand drill of claim 13, wherein the second attachment member comprises a key hole slot having an enlarged area and a narrowed area, and the projecting attachment tab of the first attachment member is smaller than the enlarged area of the key hole slot in the second attachment member and larger than the narrowed area of the key hole slot in the second attachment member.

16. (New) A hand drill including a detachable subsurface object locator accessory for detecting the presence of an object beneath a surface being probed with the locator, comprising:

a drill housing defining an accessory mount having a mounting surface for receiving a substantially flat surface and including a projecting attachment tab;

a locator housing having a substantially flat bottom surface for sliding along a surface to be probed, the substantially flat bottom surface including a slot sized and

dimensioned to engage with the projecting attachment tab for detachably mounting the locator housing to the accessory mounting surface of the drill housing;

sensing circuitry contained within the locator housing for detecting subsurface objects; and

an object indicator connected to the sensing circuitry for indicating the presence of a subsurface object.